CLAIMS

What is claimed is:

1. A method of configuring an optoelectronic device to operate in a range of temperatures, the method comprising:

(a) while operating the optoelectronic device at a first temperature, adjusting a first control parameter to satisfy a first operating requirement, and recording an associated first value of the first control parameter;

(b) while operating the optoelectronic device at a second temperature, adjusting the first control parameter to satisfy the first operating requirement, and recording an associated second value of the first control parameter;

(c) determining a sequence of values for the first control parameter for a corresponding sequence of temperatures in a predefined range of temperatures in accordance with the first and second recorded values of the first control parameter; and

(d) storing a set of control values for the first control parameter into a programmable device within the optoelectronic device, the set comprising at least a subset of the determined sequence of values.

2. The method as recited in claim 1, further comprising operating the optoelectronic device within a range of operating temperatures, the optoelectronic device having stored in the programmable device therein the set of control values.

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3. The method as recited in claim 1, wherein (a) and (b) comprise adjusting the first control parameter of the optoelectronic device to satisfy a second operating requirement while also satisfying the first operating requirement.

4. The method as recited in claim 1, wherein (a) and (b) comprise adjusting a second control parameter of the optoelectronic device to satisfy the first operating requirement.

5. The method as recited in claim 1, wherein (a) and (b) comprise adjusting a second control parameter of the optoelectronic device to satisfy a second operating requirement.

6. The method as recited in claim 1, wherein the first operating requirement is one of an optical output power requirement, an extinction ratio requirement, a jitter minimization requirement, a temperature compensation requirement, a crossing percentage requirement, a mask hit requirement, and a mask margin requirement.

7. The method as recited in claim 3, wherein the second operating requirement is one of an optical output power requirement, an extinction ratio requirement, a jitter minimization requirement, a temperature compensation requirement, a crossing percentage requirement, a mask hit requirement, and a mask margin requirement.

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8. The method as recited in claim 1, wherein the first temperature is at or near a low end of a predefined temperature operating range of the optoelectronic device and the second temperature is at or near a high end of the predefined temperature operating range of the optoelectronic device.

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9. A method of configuring an optoelectronic device, comprising:

(a) while operating the optoelectronic device at a first temperature, adjusting a first control parameter to satisfy a first operating requirement, and recording an associated first value of the first control parameter, wherein the first operating requirement is one of an optical output power requirement, an extinction ratio requirement, and a jitter minimization requirement;

(b) while operating the optoelectronic device at a second temperature, adjusting the first control parameter to satisfy the first operating requirement, and recording an associated second value of the first control parameter;

(c) determining a first temperature coefficient in accordance with the first and second recorded values of the first control parameter and determining at least one associated control value; and

(d) storing the at least one associated control value into a programmable device within the optoelectronic device.

10. The method as recited in claim 9, wherein (a) further comprises while operating the optoelectronic device at the first temperature, adjusting a second control parameter to satisfy a second operating requirement, and recording an associated first value of the second control parameter.

11. The method as recited in claim 10, wherein (b) further comprises while operating the optoelectronic device at the second temperature, adjusting the second control parameter to satisfy the second operating requirement, and recording an associated second value of the second control parameter.

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12. The method as recited in claim 11, wherein (c) further comprises determining a second temperature coefficient in accordance with the first and second recorded values of the second control parameter and determining at least one associated control value.

13. The method as recited in claim 12, wherein (d) further comprises storing the at least one associated control value into a programmable device within the optoelectronic device.

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14. An optoelectronic device comprising:

an optical subassembly;

a driver circuit coupled to the optical subassembly;

a memory, including one or more memory arrays for storing information used to control operation of the driver circuit, wherein the memory has stored therein a distinct set of digital temperature compensation values determined through testing of the optoelectronic device;

an interface for reading from and writing to locations within the memory in accordance with commands from a host device;

a temperature sensor; and

a control logic configured to determine a control value for the driver circuit in accordance with one or more digital temperature compensation values stored in the memory and the digital temperature value.

15. The optoelectronic device as recited in claim 14, wherein the optical subassembly comprises one of a transmitter optical subassembly (TOSA) and a receiver optical subassembly (ROSA).

16. The optoelectronic device as recited in claim 14, wherein the optical subassembly comprises a transmitter optical subassembly (TOSA) and a receiver optical subassembly (ROSA).

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17. The optoelectronic device as recited in claim 14, further comprising an analog to digital conversion circuitry for receiving an analog signal from the temperature sensor, converting the received analog signal into a digital temperature value.

18. The optoelectronic device as recited in claim 14, further comprising digital to analog circuitry configured to convert the control value to a control signal to control the driver circuit.

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19. An optoelectronic device comprising:

an optical subassembly;

a controller integrated circuitry in communication with the optical subassembly, the controller integrated circuitry comprising:

a memory device configured to store control parameters for at least one operating requirement corresponding to a range of operating temperatures, and

a control logic configured to access the control parameters in the memory device to control the at least one operating requirement when the optoelectronic device is operating at a temperature within the range of operating temperatures.

20. The optoelectronic device as recited in claim 19, wherein the optical subassembly comprises one of a transmitter optical subassembly (TOSA) and a receiver optical subassembly (ROSA).

21. The optoelectronic device as recited in claim 19, wherein the optical subassembly comprises a transmitter optical subassembly (TOSA) and a receiver optical subassembly (ROSA).

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